# Normalized Tables (3NF)

## ORDERS Table (Original)

| order_ID | customer_name | product_name | quantity | unit_price |
|---|---|---|---|---|
| 1 | John Smith | pencil | 10 | 1.50 |
| 2 | Jane Smith | eraser | 5 | 0.75 |
| 3 | John Smith | ruler | 2 | 0.50 |

## EMPLOYEES Table (Original)

| employee_ID | employee_name | department | manager | phone# | address |
|---|---|---|---|---|---|
| 1 | John Moore | Sales | Jane Smith | 416-123-4567 | 12 Main St |
| 2 | Jane Moore | Marketing | John Moore | 416-123-6789 | 45 Park Ave |
| 3 | Jack Smith | IT | John Moore | 416-123-8910 | 89 Elm St |

# 1. Normalized Tables

**Customers Table**

| customer_ID | customer_name |
|---|---|
| 1 | John Smith |
| 2 | Jane Smith |

**Products Table**

| product_ID | product_name |
|---|---|
| 1 | pencil |
| 2 | eraser |
| 3 | ruler |

**ContactInfo Table**

| employee_ID | phone_number | address |
|---|---|---|
| 1 | 416-123-4567 | 12 Main St |
| 2 | 416-123-6789 | 45 Park Ave |

| 3 | 416-123-8910 | 89 Elm St |
|---|---|---|

## Orders Table

| order_ID | order_date | customer_ID |
|---|---|---|
| 1 | 2025-02-10 | 1 |
| 2 | 2025-02-10 | 2 |

## OrderDetails Table

| order_ID | product_ID | quantity | unit_price |
|---|---|---|---|
| 1 | 1 | 10 | 1.50 |
| 2 | 2 | 5 | 0.75 |
| 1 | 3 | 2 | 0.50 |

## Departments Table

| department_ID | department_name |
|---|---|

| | |
|---|---|
| 1 | Sales |
| 2 | Marketing |
| 3 | IT |

**Managers Table**

| manager_ID | manager_name |
|---|---|
| 1 | Jane Smith |
| 2 | John Moore |

**Employees Table**

| employee_ID | employee_name |
|---|---|
| 1 | John Moore |
| 2 | Jane Moore |
| 3 | Jack Smith |

# Normalized ERD

**CUSTOMERS**

| int | customer_ID | PK |
|-----|-------------|-----|
| string | customer_name | |

*places*

**ORDERS**

| int | order_ID | PK |
|-----|----------|-----|
| int | customer_ID | FK |
| date | order_date | |

**PRODUCTS**

| int | product_ID | PK |
|-----|------------|-----|
| string | product_name | |

*contains*

*refers to*

**ORDERDETAIL**

| int | order_ID | PK,FK |
|-----|----------|-------|
| int | product_ID | PK,FK |
| int | quantity | |
| float | unit_price | |

**EMPLOYEES**

| int | employee_ID | PK |
|-----|-------------|-----|
| string | employee_name | |

*works in*

*is managed by*

*has contact*

**DEPARTMENTS**

| int | department_ID | PK |
|-----|---------------|-----|
| string | department_name | |

**MANAGERS**

| int | manager_ID | PK |
|-----|------------|-----|
| string | manager_name | |

**CONTACTINFO**

| int | employee_ID | PK,FK |
|-----|-------------|-------|
| string | phone_number | |
| string | address | |